

FROM : INTEL CORP

FAX NO. : 408 765 7723

Jun. 17 2005 02:43PM P1



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Fax

Page 1 of 7

Date: June 17, 2005

To: Issue Fee **Fax:** 703-746-4000 **Phone:**
United States Patent and Trademark Office

From: Michael D. Plimier **Fax:** 408-765-7723 **Phone:** 408-765-7857

Subject: Response to Office Action in Application 10/716,945

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Application No.: 10/716,945
Filing Date: November 18, 2003
First Named Inventor: Song-Hua Shi
Group Art Unit: 3742
Examiner Name: Leonid M. Fastovsky
Attorney Docket No.: P17611

Enclosures:

1. Fax Cover Sheet (1 page)
2. Part B – Fee(s) Transmittal (1 page in duplicate)
3. Comments on Statement of Reasons for Allowance (4 pages).

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FAX NO. : 408 765 7723

JUN. 17 2005 02:44PM P4

Attorney's Docket No.: P17611

Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Song-Hua Shi

U.S. Serial No: 10/716,945

Filed: November 18, 2003

For: **CHIP BONDING HEATER
WITH DIFFERENTIAL
HEATING**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

VIA FACSIMILE

Examiner: Fastovsky, Leonid M.

Art Unit: 3742

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Dear Examiner Fastovsky:

These comments are in addition to the reasons for allowance provided in the Notice of Allowance.

The prior art of record does not teach or fairly suggest a method comprising positioning a die with a perimeter and a center adjacent to a connection material that is adjacent to a substrate, applying heat to the die, wherein more heat is applied to the perimeter of the die than to the center of the die, and wherein a heat nozzle applies the heat, wherein the heat nozzle comprises a peripheral section that comprises a first material with a first thermal conductivity, and a middle section that comprises a second material with a second thermal conductivity lower than the first thermal conductivity.

The prior art of record does not teach or fairly suggest a method comprising positioning a die with a perimeter and a center adjacent to a connection material that is adjacent to a substrate, applying heat to the die, wherein more heat is applied to the perimeter of the die than to the center of the die, wherein a heat nozzle applies the heat, and wherein the

Serial No.: 10/716,945

-1-

Attorney Docket: P17611

heat nozzle comprises a peripheral section that contacts the die and a middle section that does not contact the die.

The prior art of record does not teach or fairly suggest a method comprising



The prior art of record does not teach or fairly suggest a method comprising positioning a die with a perimeter and a center adjacent to a connection material that is adjacent to a substrate, applying heat to the die, wherein more heat is applied to the perimeter of the die than to the center of the die, and wherein a heat nozzle applies the heat, wherein the heat nozzle comprises a peripheral section that comprises a first material with a first thermal conductivity, and a middle section that comprises a second material with a second thermal conductivity lower than the first thermal conductivity.

heat nozzle comprises a peripheral section that contacts the die and a middle section that does not contact the die.

The prior art of record does not teach or fairly suggest a method comprising positioning a heat nozzle adjacent a surface of a die, heating the heat nozzle, transferring heat from the heat nozzle to the die, wherein more heat per unit area is transferred to an edge portion of the die than to a middle portion of the die, wherein heating the heat nozzle comprises transferring more heat per unit area from a heating block to an edge portion of the heat nozzle than to a middle portion of the heat nozzle, and wherein the heat nozzle comprises a peripheral section that comprises a first material with a first thermal conductivity, and a middle section that comprises a second material with a second thermal conductivity lower than the first thermal conductivity.

The prior art of record does not teach or fairly suggest a method comprising positioning a heat nozzle adjacent a surface of a die, heating the heat nozzle, transferring heat from the heat nozzle to the die, wherein more heat per unit area is transferred to an edge portion of the die than to a middle portion of the die, wherein heating the heat nozzle comprises transferring substantially the same amount of heat per unit area from a heating block to an edge portion of the heat nozzle as to a middle portion of the heat nozzle, and wherein the heat nozzle comprises a peripheral section that contacts the die and a middle section that does not contact the die.

The prior art of record does not teach or fairly suggest a device comprising a heater having a heating block portion and a heat nozzle portion, a positioner, to position a die adjacent to the heater, wherein the heater is adapted to apply to a substantially planar surface more heat at a peripheral portion of the heat nozzle than at a middle portion of the heat nozzle, and wherein the heat nozzle portion comprises a peripheral section to contact the substantially planar surface and a middle section that is adapted to not contact the substantially planar surface.

Respectfully submitted,

Date:

6/17/05


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-3-

Serial No.: 10/716,945

Attorney Docket: P17611

CERTIFICATE OF TRANSMISSION
(37 C.F.R. § 1.8(a))

I hereby certify that this correspondence is being transmitted by facsimile to the United States Patent and Trademark Office on 6/17, 2005.

Michael Pflueger
Name of Person Sending Facsimile
MPL
Signature

-4-

Serial No.: 10/716,945

Attorney Docket: P17611